Aaron's Amazing Animation

The Rock-Afire Explosion, featuring the electronic animation technology developed by Lambda-Alpha (University of South Florida) Alumnus Aaron Fechter, is an entertainment ensemble currently being installed in over 100 restaurants coast to coast. The Showbiz Pizza Place restaurant chain is a joint development by Fechter and TKE Alumnus Bob Brock (Kansas University). Photo courtesy of Creative Engineering, Inc.

by Michael A. Moxley, CFC, Editor

Appearances can certainly be deceiving. Twenty-seven-year-old Aaron Fechter arrives for work dressed in blue jeans, running shoes and a screen printed T-shirt.

However, this University of South Florida alumnus is president and chief executive officer of a specialty engineering firm that anticipates gross sales of just over 24 million dollars in 1981.

The tremendous success of Aaron's company, Creative Engineering, Inc., has forced him into the role of corporate executive manager. As his style of dress indicates, it's a role that Aaron accepts with some reluctance.

This frater from Lambda-Alpha Chapter would prefer to be described as an inventor and as a developer of new forms of entertainment.

Aaron's current product, the ten-character entertainment ensemble called the "Rock-Afire Explosion," is being sold exclusively to a nationwide chain of restaurants, Showbiz Pizza Place, Inc.

Aaron's tremendous success grew out of his early interest in electronics and mechanical devices. He built his first crystal radio set when he was five years old.

By the age of 11, Fechter started a small TV repair business. He dropped that idea when he realized that he was not strong enough to lift most television sets.

His talents enabled Aaron to graduate from high school by the age of 16. He then enrolled at the University of South Florida.

Not surprisingly, Aaron's original intentions were to obtain a degree in engineering. After his first quarter of college, he changed his major to finance.

"I studied engineering for my first quarter, but I did not feel comfortable with the courses I was taking. Two courses in particular caused me to change my mind, Advanced Calculus and Graphics.

"I can't draw, and I couldn't draw any better after studying the courses.

"I thought calculus was interesting up to a point until it got so nebulous that it didn't really apply to most of the practical concepts that I was used to dealing with anymore.

"Maybe it was over my head, but whatever it was, I felt like it wasn't the right road for me."

On his degree in finance, Fechter commented, "It gave me a better background; it taught me what other people consider important in terms of dealing with money. I felt that I was much better prepared to go into business for myself."

Completing his college course work in three years, Aaron at age 19 became what he calls a "free lance inventor."

Fechter originally established Creative Engineering to manufacture automobiles. He had developed a prototype three-wheeled automobile that ran on a 12 horsepower lawn mower engine. The automobile was affordable and, most importantly, incredibly efficient, averaging over 90 miles per gallon.

Unfortunately, Aaron was not successful in locating any financial backers to go into production with his three-wheeled car.

In order to raise the money to produce his automobile, Aaron invented and sold door to door a hand-held water-powered device that was used to clean leaves out of back yard swimming pools. Still he needed more money to produce the car.

For raising additional capital, Aaron landed a contract to develop an electronic control system for a firm in Central Florida.

The company was to market shooting galleries for amusement parks along with other types of electronic entertainment devices. Aaron's job was to build the control systems necessary to operate them.

Along the way, Aaron even assisted the company in designing a couple of new electronic entertainment devices.

His next contract was for the development of an electronic control system for an animated character for the same company.

When the company decided not to pay Aaron for the previous work that he had done, he refused to give them the control system that he had developed for animated characters.

"I really got started in animation as a kind of revenge. I told them, 'I'll use the equipment I've designed in competition with you, and may the best man win.'"

Obviously, Fechter won.

With the financial backing of his father, Aaron succeeded in selling his animated characters to amusement parks. Several characters were assembled into a custom designed show complete with sound track and special effects.

While displaying his animated characters at a trade show in December of 1979, Aaron met Robert L. Brock (Alpha-Phi Chapter, Kansas University).

Frater Brock, with over 54 hotels, is the largest franchisee of Holiday Inns in the world.

Brock was looking for an entertainment form to highlight his proposed nationwide chain of pizza restaurants.

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Aaron Fechter inspects one of the characters for the Rock-Afire Explosion that are being custom made at his manufacturing facilities in Orlando, Florida. (Photo by Michael A. Moxley)

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On the results of his meeting Frater Brock, Aaron said, "His concept was to use our animated characters in a pizza chain where they would be the entertainment while people dined. For other entertainment the patrons could play a large collection of video games that would be in a room adjacent to the dining area.

"Since we (Creative Engineering) would be a pretty important part of Brock's concept, he wanted us to be loyal to the company. In exchange for exclusive rights to the animation characters for the restaurant, Showbiz Pizza Place, Brock offered us part ownership in the restaurant chain."

Thus, the Rock-Afire Explosion came into being.

Aaron expanded his production facilities dramatically to accommodate the increased demand for his characters. Today, two large manufacturing plants in Orlando employ over 110 people on a full-time basis to produce the Rock-Afire Explosion.

Presently there are already 17 restaurants open for business, and plans are for an additional 45 to be open by the end of this year.

After the development of approximately 100 company-owned restaurants, Brock and Fechter plan to make their concept available on a franchise basis.

Ironically, neither of these two individuals realized that the other was a member of Tau Kappa Epsilon until Fechter was contacted by the editor of THE TEKE Magazine for an interview. Aaron was surprised, but related that it was not the first time that his TKE involvement had been of assistance to him.

"I felt that college was an important experience. It was important from the standpoint of learning to deal with people. In terms of learning to deal with people, TKE was the most valuable experience to me.

"One of the difficulties that I had growing up was in making new friends. Most people didn't want anything to do with me because they thought I was either a genius, a jerk, or abnormal.

"But I was none. I was just too young to assimilate well into the groups of older people. I was really young for the groups that I was involved with.

"Like even in high school, I couldn't drive until I was a senior because of my age. Likewise, I was socially incompatible with the other people in my class at school, so I was anxious to get to college and even all of that out.

"I wanted to get away from the people who thought of me in this manner and meet some new people who would accept me as an average human being and get involved in sports and other activities that I had never been able to do.

"I'd always been interested in fraternities, even before attending college. Going through rush, however, TKE was one of the few fraternities willing to pledge me.

"When I joined, they also gave me the opportunity to play any sport that I wanted to regardless of how bad I was. They accepted me into the group as a friend, and the members of the chapter helped me to round out my social problems and some of my difficulties in working with people.

"They explained to me and showed me how high motivation to get jobs done, which is what I had for the fraternity, could also tear the fraternity apart if I wasn't careful about the ways and manners in which I worked with others in accomplishing those things.

"My interest and involvement in TKE taught me how to deal with people and how to work within an organization without hurting it."

Aaron felt that the influence of one specific individual with Lambda-Alpha Chapter had the most to do with his decision to join TKE.

"More than anyone else, Don Hulliung, who is now a restaurant owner in Tampa, was the strongest influence of anyone in the chapter. He was also the kind of person who would have never been my friend before I joined the fraternity.

"He was the best in sports; he was the best at everything. He became my friend and defended me when I needed defending.

"He encouraged me to join, encouraged me to stay when I wanted to quit, and he taught me what it was like to be a member of a team."

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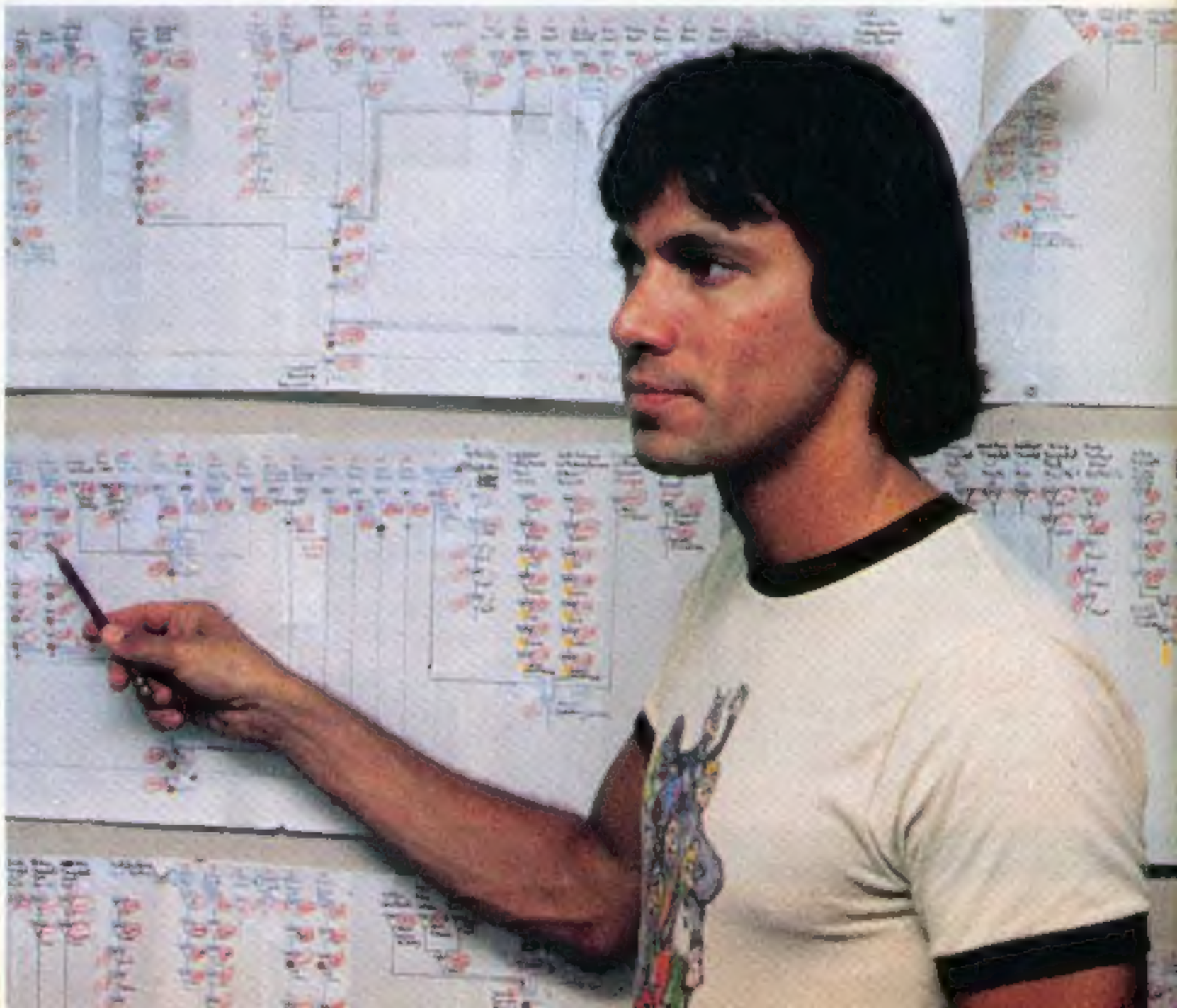


Aaron reviews in detail the plans for "Operation Moon Base," the complete computerization of all of the specifications for the entire production process for all of the parts for all of the characters in his Rock-Afire Explosion ensemble. (Photo by Michael A. Moxley)

An Analysis of Aaron's Animation

A tour through Creative Engineering's production facilities is an enlightening experience. Seeing Aaron Fechter's animated characters, such as the Rock-Afire Explosion, reveals both the simplicity of the concept behind animated characters as well as the incredible complexity involved in the execution of that concept.

Beginning with a tubular aluminum frame which serves as a "skeleton" for the finished characters, a variety of pistons and cylinders are attached to the various joints comprising the arms, legs, and other parts of the creature that will require movement.

Depending upon the type of movement required and the mechanical force necessary to achieve that movement, cylinders of different sizes and different length piston strokes are used.

The piston is moved from one end of its cylindrical container to the other by the application of compressed air.

All of the pistons have only two positions, and the resulting movement is a single step action.

However, by combining several of these cylinders controlling various individual movements and engaging them in a precise order, more complex animation is possible. An example of this is the "Beach Bear" who plays the guitar utilizing movements of both his simulated wrist and elbow joints.

These complex "high energy" movements are the prime characteristic that distinguishes Creative Engineering's animation from that of its competitors.

The plastic tubing from all of the various cylinders throughout the animated character's body traverse down the length of the creature and converge at the back of his feet. At this point the tubes are connected to a series of plastic valves in a metal housing.

Located at the junction of the tubing and valves is a series of electronic relay switches. These relay switches receive signals and respond by opening and closing the valves upon command, thus causing the movements of the character.

Typically, one of Aaron's animated characters may have 12 to 16 or more cylinders throughout its body. Any possible combination of these various cylinders may be activated at any time depending upon the types of movements that are to occur.

It all seems simple enough. Just flip the switch, the electronic relay will open the valve, air will rush into the cylinder, the piston will move, and the connected part of the creature's anatomy will take on a lifelike movement as well.

The complexity in programming these animated characters is another matter. There is a brief delay in time from when the electronic signal is received by the relay until the air reaches a certain compression in the cylinder causing the piston to move. This time factor can vary from cylinder to cylinder depending upon the mechanical differences in the various movements.

Multiply this by the fact that several movements are usually occurring simultaneously among several different cylinders and then factor in that there are ten characters in the show, many of whom are moving at the same time, and the complexity of programming reaches immense proportions.

Imagine a piano in which there was a variable time delay from when you struck the key until you heard the note being sounded. Then imagine the skill required of a classical pianist to play one of Beethoven's symphonies under those conditions.

That is analogous to the task facing Aaron Fechter as he works to program the characters in the Rock-Afire Explosion. Even after

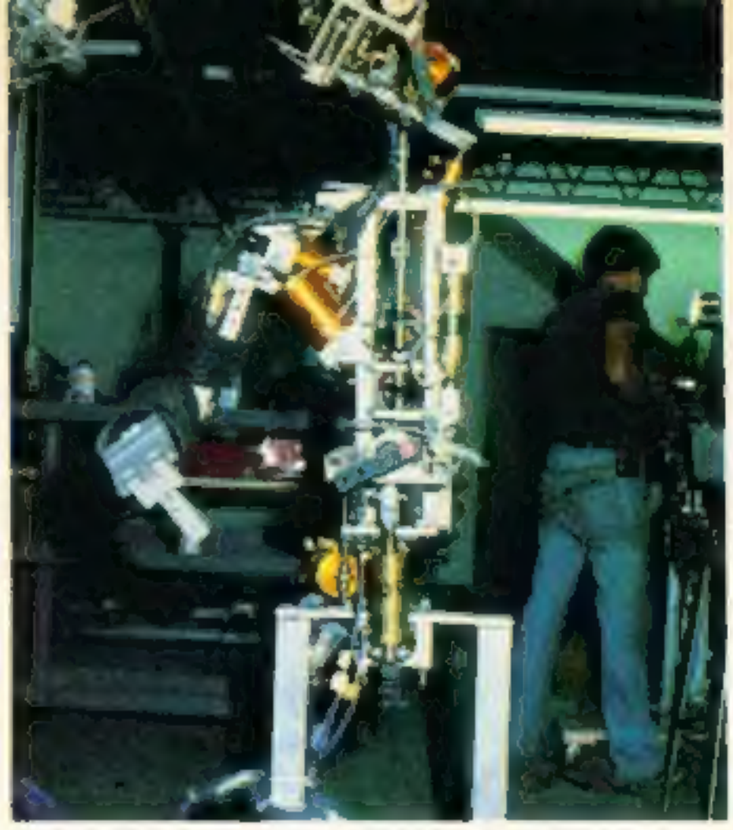
Mitzi Mozzarella is shown here before her latex-cast face is installed. (Photo by Michael A. Moxley)

all of the switching sequences are worked out in written form, it still takes Aaron three weeks to program the Rock-Afire Explosion for one eight-minute performance.

Once all of these signals have been recorded, they are then encoded along the stereo taped sound track that contains the music. As the tape deck plays the music, it also concurrently feeds the synchronized cues to the characters, causing the movement to occur in time with the music.

So precise has Aaron developed this talent, that one of his characters, "Duke LaRue," actually plays his four-piece drum set in perfect rhythm to the music on the sound track.

Once completed and installed, the Rock-Afire Explosion is an incredible display of technology. All that is required to operate the show is to put a key into the switch and turn it on.



A character for the Rock-Afire Explosion group at an early stage of production, showing the metal framework and the pneumatic cylinders that will operate the character's movements. (Photo by Michael A. Moxley)

At automatically timed intervals throughout the day, patrons in the restaurant's dining area will see the house lights dim, the stage lights come up, the curtains open, and watch a completely automated performance of the characters in perfect synchronization with the sound track of both music and dialogue. At the conclusion of the show, the curtains close, the stage lights dim, and the house lights come back up.

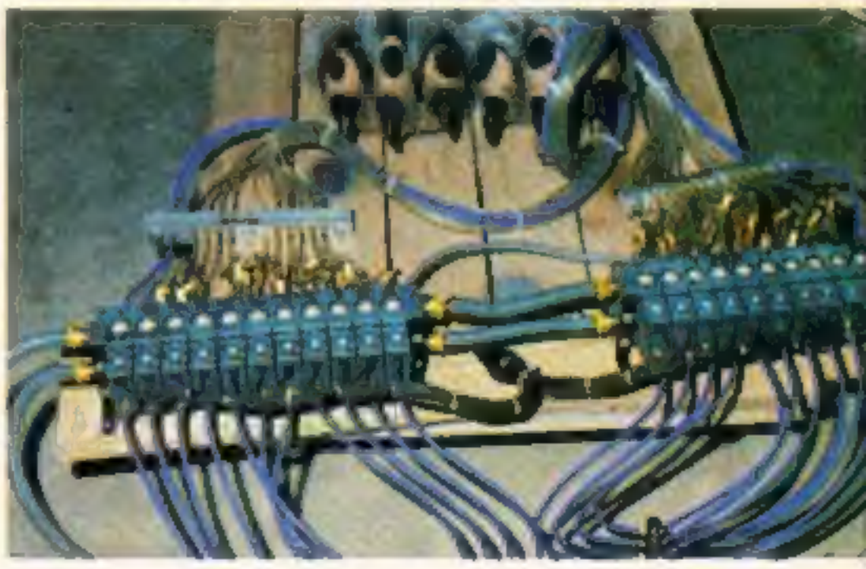
Approximately ten minutes later, the sequence will repeat itself, each time with a new performance with differing music and dialogue.

At the end of the day, the restaurant manager needs only turn the key to shut down the show until he opens for business the following day.

For birthday parties and other special celebrations, a custom designed performance may be called up from the machine's programs by simply pressing a button.

The Rock-Afire Explosion is entertainment that appeals to all age groups. A lifelike, three-dimensional cartoon fantasy for the children, creative and contemporary popular music for adolescents and young people, and a marvelous technological display for adults, the long lines in front of the Showbiz restaurants already opened across the country are testament to the success of this new entertainment concept. ▶

The electronic relays which operate the pneumatic valves and the tubing which connects to various parts of the character's anatomy are indicative of both the complexity and detail involved in the production of the Rock-Afire Explosion. (Photo by Michael A. Moxley)



The current edition of the Rock-A-fire Explosion as installed in a Showbiz Pizza Place restaurant in Orlando, Florida. Note the continual updating and costume changes that are shown in this edition as compared to the original pictured on pages 6 and 7. (Photo by Michael A. Moxley)

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Commenting further on his college career, Fechter said, "I finished up at the University of South Florida at age 19 after three years. I wanted to get out real fast and make a lot of money as soon as I could.

"I've since regretted that decision, though; I would have enjoyed staying in school a little longer. I enjoyed the fraternity experience; in fact, TKE was my favorite part of college.

"Today I still maintain contact with the chapter and I return for the Red Carnation Ball and alumni reunions and that sort of thing whenever it's possible."

As befits someone with his optimism and positive attitude, Aaron is not content with his present success.

"We have three new projects under development that involve high technology and modernization way ahead of its time, which aren't in the entertainment field at all. These projects are in the educational field—information processing and industrial engineering.

"With these projects, I'm hoping that we can continue to pioneer and be ahead of everyone else the same way we've succeeded in the field of animation.

"We've also invented our own kind of music; it's called Rock-Afire and, in fact, we named our characters after the music.

"We have our own recording studio and we design and produce all of our own music.

"The next step will be distributing our music on a commercial basis. In fact, we have a test pressing for some of our records which we'll have out in a few weeks.

"With all the work on our music being done in-house, we won't be going through any of the standard distribution networks to get our records out."

Aaron is continuing to develop and improve his animated characters. He gave us some clues as to what we could expect in the future in the animated character field.

"One of our goals is to make our characters mobile. They now perform well, but their feet or some portion of the character is bolted to the floor. This is necessary so we can get the connections to the animals and keep them balanced.

"We'd like to miniaturize everything, put it all inside the characters and teach them balance so they can be completely articulated and move around and be, in essence, completely mobile robots.

"Of course, it would be easy to make a robot like the Star Wars character R2-D2 that is remote controlled and moves by means of wheels, just rolling around on command.

"The big deal that's so difficult is teaching a character to actually walk like the Star Wars character C-3PO. He's the one who could actually walk and lift one foot and put it down, keep his balance, lift the other foot and put it down.

"In reality, C-3PO was a man in a costume while R2-D2 was an actual robot.

"The reason we want them to walk rather than roll is because they're going to do this for entertainment purposes. If all we were doing was building an industrial robot, we'd teach him to roll.

"Because all we have to do is get him from point A to point B, but we want him to be a performer, an entertainer, a dancer, a runner, and a worker. And whatever he is, he's going to need to be able to walk like a human being."

Aaron Fechter has already taken the technology of building life-sized animated characters a generation beyond anything anyone else has been able to produce. To realize his goal of mobility would bring yet another fantasy to life.

Given what he has been able to accomplish in the last few years, it's not that difficult to imagine C-3PO coming to life by the talents of Aaron's amazing animation. ▶

AARON'S AMAZING ANIMATION / AN ANALYSIS OF AARON'S ANIMATION

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